

## INTERNATIONAL SEARCH REPORT

International Application No.  
PCT/EP 93/03700A. CLASSIFICATION OF SUBJECT MATTER  
IPC 5 B65G47/90 B29C51/44 B29C37/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 5 B65G B29C B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE,A,39 28 301 (ADOLF ILLIG MASCHINENBAU) 28 February 1991 see claims 1-3; figures ---	1,2,7
X	FR,A,2 416 856 (B. POULLAIN) 7 September 1979 see figures ---	1,2,9
A	DE,A,35 22 983 (F. SCHWOPE) 9 January 1986 see page 6, line 11 - page 7, line 7; claims 1-4; figures 1-11 ---	1,2,4,5
A	EP,A,0 098 420 (LEESONA) 18 January 1984 see figures 6-8 ---	1-3 -/-

 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

## \* Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- \*&\* document member of the same patent family

Date of the actual completion of the international search

28 March 1994

Date of mailing of the international search report

04. 05. 94

## Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+ 31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+ 31-70) 340-3016

## Authorized officer

Kosicki, T

## INTERNATIONAL SEARCH REPORT

International Application No.  
PCT/EP 93/03700

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE,C,37 24 178 (OFFICINE MECCANICHE VERONESI) 9 June 1988 see claims; figures ---	1,2,10
A	DE,A,24 45 177 (CARLO SCHABERGER SONDERMASCHINENBAU) 1 April 1976 see figures ---	1,2
P,X	FR,A,2 680 153 (TECMA PACK) 12 February 1993 see claim 1; figures -----	1,2,7,8, 10

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No.

PCT/EP 93/03700

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
DE-A-3928301	28-02-91	NONE		
FR-A-2416856	07-09-79	NONE		
DE-A-3522983	09-01-86	NONE		
EP-A-0098420	18-01-84	US-A-	4464329	07-08-84
		AU-A-	1646383	05-01-84
		JP-A-	59019108	31-01-84
DE-C-3724178	09-06-88	AT-B-	396904	27-12-93
		AU-B-	598934	05-07-90
		BE-A-	1003481	07-04-92
		CH-A-	673431	15-03-90
		FR-A-	2616103	09-12-88
		GB-A,B	2205272	07-12-88
		JP-A-	1011775	17-01-89
		NL-A-	8801417	02-01-89
		SE-A-	8800795	06-12-88
		US-A-	4872826	10-10-89
DE-A-2445177	01-04-76	NONE		
FR-A-2680153	12-02-93	NONE		



Chartered Patent Attorneys - European Patent Attorneys - International Patents - Trade Marks - Designs & Copyright

OFFICES IN GLASGOW LONDON AND MONACO

European Patent Office  
Erhardtstrasse 27  
D-80298 München  
Germany

4 WEST REGENT STREET  
GLASGOW G2 1RS  
GREAT BRITAIN

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TELEX: 77298 FITPAT G  
FAX: 0141-306 9090  
CABLE: FITZPATENT, GLASGOW

PCT CHAPTER II  
MU DG2  
ATTN: G Golombek

VIA FACSIMILE  
CONFIRMATION BY  
REGISTERED AIRMAIL

32/62220/079

PCT/EP95/03451

19 November 1996

Dear Sirs

International Patent Application No. PCT/EP95/03451 in the name  
of ISAP OMV GROUP SPA et al -

I refer to the Communication pursuant to Rule 66 PCT dated 22 July 1996, and acknowledge the extension of the period set for reply thereto pursuant to Rule 66.2(d) PCT as confirmed by the communication of 16 October 1996.

The Applicant is already familiar with the prior art document D1 referred to by the Examiner which is simply the UK counterpart of Italian Patent Application No VR92A000012 filed on 3 February 1992 from which D1 has claimed the priority date and already referred to in the introduction to the present specification.

The Applicant proposes a revised claim 1 redrafted in the two part formulation requested by the Examiner in a effort to more clearly distinguish the invention from the cited reference and also submits the following observations in support of its position.

It is disputed that D1 actually discloses the subject matter claimed in the present patent application. The Examiner is respectfully requested to consider that D1 only discloses template conveyor means on which thermoformed articles are loaded (ie simply inserted into respective holes in the templates) after extraction from the female mould. Articles on each template are not retained against undesired movements, such as inertial shifting as discussed in the introductory part (pages 1 and 2) of the description in the present PCT application. Retention means for the thermoformed articles are neither disclosed nor suggested in D1.

It is clear from the amended claim 1 now submitted that these features which are known from D1 are set forth in the preamble whilst the additional features of this invention which make the whole combination claimed inventive are defined in a characterizing portion. No addition of matter arises by the proposed amendment and no other claim is affected by this amendment. It is respectfully submitted that this claim is now in acceptable form according to Article 6 and Rule 6.3(b) and satisfies the criteria set out in Article 33(1)-(4).

Claim 2 is not anticipated by D1 both because claim 1 is new and because D1 does not disclose nor suggest pick-up extraction means equipped with retention means and arranged to be sequentially inserted between female die (12) and counter die (13).

The same considerations apply to claim 5 and 6.

D1 discloses pick-up heads 26,27 moving over female die (6,7) only.

DE-3928301 and WO-94 15863 do not disclose conveying templates nor retention means for the thermoformed objects located in conveying templates.

WO-94/15863 discloses specific retaining means applied to a pick-up head not to conveying templates.

Accordingly, it is respectfully submitted that the present claims 2 to 20 are both new and inventive.

I submit that the points raised by the Examiner in that Communication have been met and look forward to receipt of a favourable '409 Report. Nevertheless should the Examiner find that there remain any other points which could readily be handled within the International phase in accordance with the provisions of Rule 66.4(b) PCT I request the opportunity to deal with these by way of telephone discussion or attendance at an interview. It is noted in this respect that the time limit prescribed by Rule 69.2(i) expires 14 January 1997.

Yours faithfully  
for Fitzpatricks

Eric Ede  
European Patent Attorney

Encs: Replacement page 14 (X 3)

**Claims**

1. A thermoforming apparatus comprising
  - a thermoforming machine (10) fitted with at least one female die (12) and counter-die or male die (13) reciprocally approachable and removable for the operations of closing, thermoforming and opening, a feeder appropriate for feeding thermoforming material in ribbon or plate (14) from between each female die (12) and counter-die (13),
  - cutting means associated with the die and counter-die for cutting the ribbon or plate material, immediately after the closure of the die (12) and counter-die (13),
  - at least one work or treatment station for articles (15) thermoformed in the or each die (12) or counter-die (13),
  - extraction pick-up means (16) designed to withdraw a thermoformed article moulding from the female die (12) and either to convey the same to at least one work or treatment station or to transfer it to a receiving conveying template (17) which has the same seating configuration as that of the female die (12) and is arranged to move the thermoformed articles (15) past at least one work or treatment station,
  - characterised in that retention means are provided in the said extraction pick-up means and/or in the said receiving conveying template to hold them in position against undesired movement therein.
2. A thermoforming apparatus as claimed in Claim 1, characterised in that the said pick-up extraction means comprises a plate-like head (16) arranged to be sequentially inserted between the or each female die (12) and counter-die (13) concomitantly with each opening of the same.
3. A thermoforming apparatus as claimed in Claim 2, characterised in that it comprises a carousel conveyor (20) with a plurality of bearing arms, each of which supports a respective plate-like head (17) fitted with said retention means for the retention of the thermoformed articles (15) in the correct set while they are being conveyed, stepwise and synchronously with the opening-closing rate of the dies

The demand must be filed directly with the competent International Preliminary Examining Authority or, if two or more Authorities are competent, with the one chosen by the applicant. The full name or two-letter code of that Authority may be indicated by the applicant on the line below:  
**IPEA/** \_\_\_\_\_

PCT

## CHAPTER II

## DEMAND

**under Article 31 of the Patent Cooperation Treaty:**

The undersigned requests that the international application specified below be the subject of international preliminary examination according to the Patent Cooperation Treaty.

**For International Preliminary Examining Authority use only**

Identification of IPEA		Date of receipt of DEMAND
<b>Box No. I IDENTIFICATION OF THE INTERNATIONAL APPLICATION</b>		Applicant's or agent's file reference 32/62220/079
International application No. PCT/EP 95/03451	International filing date (day/month/year) 01/09/95	(Earliest) Priority date (day/month/year) 14/09/94
<b>Title of invention</b> <b>THERMOFORMING APPARATUS FOR THERMOFORMABLE MATERIALS IN RIBBON OR SHEET-FORM</b>		
<b>Box No. II APPLICANT(S)</b>		
<b>Name and address:</b> (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) ISAP OMV GROUP SPA 37025 PARONA VERONA ITALY		<b>Telephone No.:</b>  <b>Faxsimile No.:</b>  <b>Teleprinter No.:</b>
<b>State (i.e. country) of nationality:</b> ITALY		<b>State (i.e. country) of residence:</b> ITALY
<b>Name and address:</b> (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) PADOVANI, Pietro VIA CARLO EDERLE, 43 37100 VERONA ITALY		
<b>State (i.e. country) of nationality:</b> ITALY		<b>State (i.e. country) of residence:</b> ITALY
<b>Name and address:</b> (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)		
<b>State (i.e. country) of nationality:</b> 		<b>State (i.e. country) of residence:</b> 
<input type="checkbox"/> Further applicants are indicated on a continuation sheet.		

**Form PCT/IPEA/401 (first sheet) (January 1994)**

*See Notes to the demand form*

## B x No. III AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE

The following person is  agent  common representativeand  has been appointed earlier and represents the applicant(s) also for international preliminary examination. is hereby appointed and any earlier appointment of (an) agent(s)/common representative is hereby revoked. is hereby appointed, specifically for the procedure before the International Preliminary Examining Authority, in addition to the agent(s)/common representative appointed earlier.Name and address: (Family name followed by given name; for a legal entity, full official designation.  
The address must include postal code and name of country.)FITZPATRICKS  
4 WEST REGENT STREET  
GLASGOW  
G2 1RS  
UNITED KINGDOMTelephone No.:  
(0) 141 306 9000Facsimile No.:  
(0) 141 306 9090Teleprinter No.:  
77298 FITPATG Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

## Box No. IV STATEMENT CONCERNING AMENDMENTS

The applicant wishes the International Preliminary Examining Authority\*

- (i)  to start the international preliminary examination on the basis of the international application as originally filed.
- (ii)  to take into account the amendments under Article 34 of
  - the description (amendments attached).
  - the claims (amendments attached).
  - the drawings (amendments attached).
- (iii)  to take into account any amendments of the claims under Article 19 filed with the International Bureau (a copy is attached).
- (iv)  to disregard any amendments of the claims made under Article 19 and to consider them as reversed.
- (v)  to postpone the start of the international preliminary examination until the expiration of 20 months from the priority date unless that Authority receives a copy of any amendments made under Article 19 or a notice from the applicant that he does not wish to make such amendments (Rule 69.1(d)). (This check-box may be marked only where the time limit under Article 19 has not yet expired.)

- \* Where no check-box is marked, international preliminary examination will start on the basis of the international application as originally filed or, where a copy of amendments to the claims under Article 19 and/or amendments of the international application under Article 34 are received by the International Preliminary Examining Authority before it has begun to draw up a written opinion or the international preliminary examination report, as so amended.

## Box No. V ELECTION OF STATES

The applicant hereby elects all eligible States (that is, all States which have been designated and which are bound by Chapter II of the PCT) except.....

.....

.....

(If the applicant does not wish to elect certain eligible States, the name(s) or country code(s) of those States must be indicated above.)

## Box N . VI CHECK LIST

The demand is accompanied by the following documents for the purposes of international preliminary examination:

1. amendments under Article 34
 

description	:	sheets
claims	:	sheets
drawings	:	sheets
2. letter accompanying amendments under Article 34
 

:	sheets
---	--------
3. copy of amendments under Article 19 :
4. copy of statement under Article 19 :
5. other (specify):

For International Preliminary  
Examining Authority use only

received      not received

<input type="checkbox"/>	<input type="checkbox"/>

The demand is also accompanied by the item(s) marked below:

1.  separate signed power of attorney
2.  copy of general power of attorney
3.  statement explaining lack of signature
4.  fee calculation sheet
5.  other (specify):

## Box No. VII SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the demand).

ERIC EDE (FOR FITZPATRICKS)  
AGENT FOR APPLICANT

## For International Preliminary Examining Authority use only

1. Date of actual receipt of DEMAND:

2. Adjusted date of receipt of demand due to CORRECTIONS under Rule 60.1(b):

3.  The date of receipt of the demand is AFTER the expiration of 19 months from the priority date and item 4 or 5, below, does not apply.  The applicant has been informed accordingly.
4.  The date of receipt of the demand is WITHIN the period of 19 months from the priority date as extended by virtue of Rule 80.5.
5.  Although the date of receipt of the demand is after the expiration of 19 months from the priority date, the delay in arrival is EXCUSED pursuant to Rule 82.

## For International Bureau use only

Demand received from IPEA on:

## PCT

## FEE CALCULATION SHEET

## Annex to the Demand for international preliminary examination

<p>International application No. PCT/EP 95/03451</p> <p>Applicant's or agent's file reference 32/62220/079</p> <p>Applicant ISAP OMV GROUP SPA</p>	<p>For International Preliminary Examining Authority use only</p> <p>Date stamp of the IPEA</p>									
<p><b>Calculation of prescribed fees</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%;">1. Preliminary examination fee .....</td> <td style="width: 10%; text-align: center;">DEM 3000.00</td> <td style="width: 20%; text-align: right; border: 1px solid black; padding: 2px;">P</td> </tr> <tr> <td>2. Handling fee .....</td> <td style="text-align: center;">DEM 292.00</td> <td style="border: 1px solid black; padding: 2px; text-align: right;">H</td> </tr> <tr> <td>3. Total of prescribed fees Add the amounts entered at P and H and enter total in the TOTAL box .....</td> <td style="text-align: center; border: 1px solid black; padding: 2px;">DEM 3292.00</td> <td style="border: 1px solid black; padding: 2px; text-align: right;">TOTAL</td> </tr> </table>		1. Preliminary examination fee .....	DEM 3000.00	P	2. Handling fee .....	DEM 292.00	H	3. Total of prescribed fees Add the amounts entered at P and H and enter total in the TOTAL box .....	DEM 3292.00	TOTAL
1. Preliminary examination fee .....	DEM 3000.00	P								
2. Handling fee .....	DEM 292.00	H								
3. Total of prescribed fees Add the amounts entered at P and H and enter total in the TOTAL box .....	DEM 3292.00	TOTAL								
<p><b>Mode of Payment</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> authorization to charge deposit account with the IPEA (see below)  <input type="checkbox"/> cheque  <input type="checkbox"/> postal money order  <input type="checkbox"/> bank draft                 </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> cash  <input type="checkbox"/> revenue stamps  <input type="checkbox"/> coupons  <input type="checkbox"/> other (specify): _____                 </td> </tr> </table>		<input checked="" type="checkbox"/> authorization to charge deposit account with the IPEA (see below) <input type="checkbox"/> cheque <input type="checkbox"/> postal money order <input type="checkbox"/> bank draft	<input type="checkbox"/> cash <input type="checkbox"/> revenue stamps <input type="checkbox"/> coupons <input type="checkbox"/> other (specify): _____							
<input checked="" type="checkbox"/> authorization to charge deposit account with the IPEA (see below) <input type="checkbox"/> cheque <input type="checkbox"/> postal money order <input type="checkbox"/> bank draft	<input type="checkbox"/> cash <input type="checkbox"/> revenue stamps <input type="checkbox"/> coupons <input type="checkbox"/> other (specify): _____									
<p><b>Deposit Account Authorization</b> (this mode of payment may not be available at all IPEAs)</p> <p>The IPEA/ <u>EP</u> <input checked="" type="checkbox"/> is hereby authorized to charge the total fees indicated above to my deposit account.</p> <p><input type="checkbox"/> (this check-box may be marked only if the conditions for deposit accounts of the IPEA so permit) is hereby authorized to charge any deficiency or credit any overpayment in the total fees indicated above to my deposit account.</p>										
28050161	12 April 1996	Signature								
Deposit Account Number	Date (day/month/year)	Signature								

## PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF ELECTION  
(PCT Rule 61.2)

To:

United States Patent and Trademark  
Office  
(Box PCT)  
Washington D.C. 20231  
United States of America

in its capacity as elected Office

Date of mailing (day/month/year) 26 April 1996 (26.04.96)	
International application No. PCT/EP95/03451	Applicant's or agent's file reference 32/62220/079
International filing date (day/month/year) 01 September 1995 (01.09.95)	Priority date (day/month/year) 14 September 1994 (14.09.94)
Applicant PADOVANI, Pietro	

1. The designated Office is hereby notified of its election made:

in the demand filed with the International Preliminary Examining Authority on:

10 April 1996 (10.04.96)

in a notice effecting later election filed with the International Bureau on:

---

2. The election  was was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland  Facsimile No.: (41-22) 740.14.35	Authorized officer  Marie-José Devillard  Telephone No.: (41-22) 730.91.11
---	--

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>32/62220/079</b>	<b>FOR FURTHER ACTION</b>	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
International application No. <b>PCT/EP 95/03451</b>	International filing date ( <i>day/month/year</i> ) <b>01/09/95</b>	(Earliest) Priority Date ( <i>day/month/year</i> ) <b>14/09/94</b>
Applicant <b>ISAP OMV GROUP SPA et al.</b>		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

1.  Certain claims were found unsearchable (see Box I).
2.  Unity of invention is lacking (see Box II).
3.  The international application contains disclosure of a nucleotide and/or amino acid sequence listing and the international search was carried out on the basis of the sequence listing
  - filed with the international application.
  - furnished by the applicant separately from the international application,
    - but not accompanied by a statement to the effect that it did not include matter going beyond the disclosure in the international application as filed.
  - Transcribed by this Authority
4. With regard to the title,  the text is approved as submitted by the applicant.
  - the text has been established by this Authority to read as follows:
5. With regard to the abstract,
  - the text is approved as submitted by the applicant.
  - the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.
6. The figure of the drawings to be published with the abstract is:
 

Figure No. 7

  - as suggested by the applicant.
  - because the applicant failed to suggest a figure.
  - because this figure better characterizes the invention.
  - None of the figures.

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 95/03451

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 6 B29C51/44

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 6 B29C B65G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB,A,2 263 660 (VERONESI OFF MEC) 4 August 1993 see abstract; figures 7-33 ---	1,2, 5-10,13
X	DE,A,39 28 301 (ILLIG MASCHINENBAU ADOLF) 28 February 1991 see column 1, line 62 - column 2, line 36; claims; figures ---	1,2
X	WO,A,94 15863 (ISAP OMV GROUP SPA ;PADOVANI PIETRO (IT)) 21 July 1994 see abstract; figures ---	1,2
A	GB,A,2 149 717 (OMV SPA OFF MECC VERONESE) 19 June 1985 see abstract; figures 1-11 ---	1-16
		-/-



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

## \* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

1

Date of the actual completion of the international search

4 January 1996

Date of mailing of the international search report

03.02.96

## Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+ 31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+ 31-70) 340-3016

## Authorized officer

Kosicki, T

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 95/03451

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US,A,4 807 421 (ARAKI KAZUNORI ET AL) 28 February 1989 see figures ---	10,16
A	US,A,4 684 012 (FEDDERSEN FREDERICK J) 4 August 1987 see figures ---	10
A	US,A,2 992 454 (L. E. ELPHEE) 18 July 1961 see figures ---	16
A	EP,A,0 220 967 (REMY & CIE E P) 6 May 1987 see figures ---	
A	FR,A,2 416 856 (POULLAIN BERNARD) 7 September 1979 see figures -----	

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 95/03451

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
GB-A-2263660	04-08-93	AU-B-	655344	15-12-94
		AU-B-	3206793	05-08-93
		BE-A-	1005832	15-02-94
		BG-A-	97364	25-04-94
		CA-A-	2087512	04-08-93
		CN-A-	1093644	19-10-94
		CZ-A-	9300122	19-01-94
		DE-A-	4224009	05-08-93
		EP-A-	0554799	11-08-93
		ES-A-	2068741	16-04-95
		FR-A-	2686827	06-08-93
		GR-A-	93100034	29-10-93
		HU-A-	66824	30-01-95
		JP-A-	6293063	21-10-94
		LU-A-	88216	17-05-93
		NL-A-	9201383	01-09-93
		PT-A-	101192	30-06-94
		SE-A-	9202260	04-08-93
		TR-A-	26597	15-03-95
		US-A-	5453237	26-09-95
		ZA-A-	9300704	06-09-93
DE-A-3928301	28-02-91	NONE		
WO-A-9415863	21-07-94	AU-B-	5815394	15-08-94
		CA-A-	2153766	21-07-94
		CN-A-	1093973	26-10-94
		EP-A-	0679141	02-11-95
		NO-A-	952723	25-08-95
GB-A-2149717	19-06-85	AT-B-	392234	25-02-91
		AU-B-	558959	12-02-87
		AU-B-	3516484	30-05-85
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		CA-A-	1232423	09-02-88
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		DE-A-	3439660	23-05-85
		FR-A, B	2557017	28-06-85
		JP-C-	1520740	29-09-89
		JP-A-	60132730	15-07-85

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 95/03451

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
GB-A-2149717		JP-B- 63065494 NL-A,C 8403480 SE-B- 465415 SE-A- 8405703 SU-A- 1378778 US-A- 4560339		15-12-88 03-06-85 09-09-91 16-05-85 28-02-88 24-12-85
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US-A-4684012	04-08-87	US-A- 4763778 AU-B- 563403 AU-B- 3541384 CA-A- 1234549		16-08-88 09-07-87 09-01-86 29-03-88
US-A-2992454	18-07-61	NONE		
EP-A-0220967	06-05-87	FR-A- 2589133 FR-A- 2591575 CA-A- 1259942 DE-A- 3660897 JP-B- 6104483 JP-A- 62100308 US-A- 4697695		30-04-87 19-06-87 26-09-89 17-11-88 21-12-94 09-05-87 06-10-87
FR-A-2416856	07-09-79	NONE		

20  
PENT COOPERATION TREAT

PCT

REC'D 11 DEC 1996

WIPO PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>32/62220/079</b>	<b>FOR FURTHER ACTION</b>	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. <b>PCT/ EP 95/ 03451</b>	International filing date (day/month/year) <b>01/09/1995</b>	Priority date (day/month/year) <b>14/09/1994</b>
International Patent Classification (IPC) or national classification and IPC <b>B29C51/44</b>		
Applicant <b>ISAP OMV GROUP SPA et al.</b>		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consists of a total of 7 sheets.

3. This report contains indications and corresponding pages relating to the following items:

- I  Basis of the report
- II  Priority
- III  Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV  Lack of unity of invention
- V  Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI  Certain documents cited
- VII  Certain defects in the international application
- VIII  Certain observations on the international application

Date of submission of the demand <b>10/04/1996</b>	Date of completion of this report <b>09.12.96</b>
Name and mailing address of the IPEA/   European Patent Office D-80298 Munich Tel. (+ 49-89) 2399-0, Tx: 523656 epmu d Fax: (+ 49-89) 2399-4465	Authorized officer   <b>G. Golombek</b> Telephone No. <b>2909</b>

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

## I. Basis of the report

1. This report has been drawn up on the basis of (Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.):

the international application as originally filed.

the description, pages 1 - 13 \_\_\_\_\_, as originally filed,  
pages \_\_\_\_\_, filed with the demand,  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_,  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_,

the claims, Nos. 3 (part 2), 4 - 24 \_\_\_\_\_, as originally filed,  
Nos. \_\_\_\_\_, as amended under Article 19,  
Nos. \_\_\_\_\_, filed with the demand,  
Nos. 1, 2 and 3 (part 1) \_\_\_\_\_, filed with the letter of 19.11.96,  
Nos. \_\_\_\_\_, filed with the letter of \_\_\_\_\_,

the drawings, sheets/fig 1/9 - 9/9 \_\_\_\_\_, as originally filed,  
sheets/fig \_\_\_\_\_, filed with the demand,  
sheets/fig \_\_\_\_\_, filed with the letter of \_\_\_\_\_,  
sheets/fig \_\_\_\_\_, filed with the letter of \_\_\_\_\_.

2. The amendments have resulted in the cancellation of:

- the description, pages \_\_\_\_\_.  
 the claims, Nos. \_\_\_\_\_.  
 the drawings, sheets/fig \_\_\_\_\_.

3.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

Intern. application No.

PCT/EP95/03451

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement

## 1. STATEMENT

Novelty (N) Claims \_\_\_\_\_ YES  
Claims 1, 2, 5 and 6 \_\_\_\_\_ NO

Inventive Step (IS) Claims \_\_\_\_\_ YES  
Claims 3, 4, 7 - 24 NO

## 2 CITATIONS AND EXPLANATIONS

**Claim 1.**

Document D1 = GB-A-2 263 660 discloses a thermoforming apparatus comprising a thermoforming machine fitted with female dies and male dies reciprocally approachable and removable for the operations of closing, thermoforming and opening, a feeder appropriate for feeding thermoforming material in plate form between each female die and the female die, cutting means associated with the die and the female die for cutting the plate material, immediately after the closure of the die and female die, at least one work or treatment station for articles thermoformed in each die, extraction pick-up means designed to withdraw a thermoformed article moulding from the female die and either to convey the same to one or more work or treatment stations or to transfer it to a receiving conveying template which has the same seating configuration as that of the female die and is arranged to move the thermoformed articles past one or more work treatment stations, means of retention (a necessity for labeling ac-

cording to page 22 second paragraph) suitable for engaging each thermoformed article with respective extraction head or with the respective receiving template, thus ensuring its positioning in correct set during conveyance through the work or treatment stations (figures 10 - 15 and respective passages of the description).

Thus, claim 1 does not meet the requirements of Article 33(2) PCT because of lack of novelty of its subject-matter.

**Claims 2 - 24.**

These claims disclose features which are either known from D1 (compare the features of claims 2, 5 and 6 to figures 7 and 15 of D1) or which seem to be a mere matter of design for a person skilled in the art.

Thus, claims 2 - 24 do not add any new or inventive matter to the claims to which they refer.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

Intern. application No.  
PCT/EP95/03451

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

The document D1 has not been identified in the description nor as the relevant background art disclosed therein been discussed. The requirements of Rule 5.1(a)(ii) PCT are, thus, not fulfilled.

**Claims**

1. A thermoforming apparatus comprising

- a thermoforming machine (10) fitted with at least one female die (12) and counter-die or male die (13) reciprocally approachable and removable for the operations of closing, thermoforming and opening, a feeder appropriate for feeding thermoforming material in ribbon or plate (14) from between each female die (12) and counter-die (13),
- cutting means associated with the die and counter-die for cutting the ribbon or plate material, immediately after the closure of the die (12) and counter-die (13),
- at least one work or treatment station for articles (15) thermoformed in the or each die (12) or counter-die (13),
- extraction pick-up means (16) designed to withdraw a thermoformed article moulding from the female die (12) and either to convey the same to at least one work or treatment station or to transfer it to a receiving conveying template (17) which has the same seating configuration as that of the female die (12) and is arranged to move the thermoformed articles (15) past at least one work or treatment station,
- characterised in that retention means are provided in the said extraction pick-up means and/or in the said receiving conveying template to hold them in position against undesired movement therein.

2. A thermoforming apparatus as claimed in Claim 1, characterised in that the said pick-up extraction means comprises a plate-like head (16) arranged to be sequentially inserted between the or each female die (12) and counter-die (13) concomitantly with each opening of the same.

3. A thermoforming apparatus as claimed in Claim 2, characterised in that it comprises a carousel conveyor (20) with a plurality of bearing arms, each of which supports a respective plate-like head (17) fitted with said retention means for the retention of the thermoformed articles (15) in the correct set while they are being conveyed, stepwise and synchronously with the opening-closing rate of the dies

**ATENT COOPERATION TREATY**  
**FITZPATRICKS**

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

24 JUL 1996

**PCT**

To:

**FITZPATRICKS**  
4 West Regent Street  
GLASGOW G2 1RS  
GRANDE BRETAGNE

*GRAT 6*

26/7

WRITTEN OPINION

(PCT Rule 66)

*EE*  
RECD  
Date of mailing  
(day/month/year)

*23/7/96*  
22.07.96

Applicant's or agent's file reference  
32/62220/079

**REPLY DUE**

within 3 months/day  
from the above date of mailing

International application No.

International filing date (day/month/year)

Priority date (day/month/year)

PCT/EP 95/03451

01/09/1995

14/09/1994

International Patent Classification (IPC) or both national classification and IPC

B29C51/44

Applicant

ISAP OMV GROUP SPA et al.

1. This written opinion is the first (first, etc.) drawn up by this International Preliminary Examining Authority.

2. This report contains indications and corresponding pages relating to the following items:

- I  Basis of the opinion
- II  Priority
- III  Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV  Lack of unity of invention
- V  Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI  Certain documents cited
- VII  Certain defects in the international application
- VIII  Certain observations on the international application

3. The applicant is hereby invited to reply to this opinion.

**When?** See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d).

**How?** By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3.  
For the form and the language of the amendments, see Rules 66.8 and 66.9.

**Also** For an additional opportunity to submit amendments, see Rule 66.4.  
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4bis.  
For an informal communication with the examiner, see Rule 66.6.

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.

4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 14/01/1997.

Name and mailing address of the IPEA/



European Patent Office  
D-80298 Munich  
Tel. (+49-89) 2399-0, Tx: 523656 epmu d  
Fax: (+49-89) 2399-4465

Authorized officer

Examiner

*G. Golombek*

Formalities officer  
(incl. extension of time limits)  
Telephone No. *82221*

*M. Langhoff*

*M. Langhoff*

WRITTEN OPINION

Intern. application No.

PCT/EP95/03451

I. Basis of the opinion

1. This opinion has been drawn up on the basis of (Substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed".):

the international application as originally filed.

the description, pages \_\_\_\_\_, as originally filed,  
pages \_\_\_\_\_, filed with the demand,  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_,

the claims, Nos. \_\_\_\_\_, as originally filed,  
Nos. \_\_\_\_\_, as amended under Article 19,  
Nos. \_\_\_\_\_, filed with the demand,  
Nos. \_\_\_\_\_, filed with the letter of \_\_\_\_\_,

the drawings, sheets/fig \_\_\_\_\_, as originally filed,  
sheets/fig \_\_\_\_\_, filed with the demand,  
sheets/fig \_\_\_\_\_, filed with the letter of \_\_\_\_\_,

2. The amendments have resulted in the cancellation of:

the description, pages \_\_\_\_\_.  
 the claims, Nos. \_\_\_\_\_.  
 the drawings, sheets/fig \_\_\_\_\_.

3.  This opinion has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

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V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement

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1. STATEMENT

Novelty (N)	Claims 1, 2, 5 and 6 _____
	Claims _____
Inventive Step (IS)	Claims 3, 4, 7 - 24 _____
	Claims _____
Industrial Applicability (IA)	Claims _____
	Claims _____

---

2. CITATIONS AND EXPLANATIONS

**Claim 1.**

Document D1 = GB-A-2 263 660 discloses a thermoforming apparatus comprising a thermoforming machine fitted with female dies and male dies reciprocally approachable and removable for the operations of closing, thermoforming and opening, a feeder appropriate for feeding thermoforming material in plate form between each female die and the female die, cutting means associated with the die and the female die for cutting the plate material, immediately after the closure of the die and female die, at least one work or treatment station for articles thermoformed in each die, extraction pick-up means designed to withdraw a thermoformed article moulding from the female die and either to convey the same to one or more work or treatment stations or to transfer it to a receiving conveying template which has the same seating configuration as that of the female die and is arranged to move the thermoformed articles past one or more work treatment stations, means of retention suitable for engaging each

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thermoformed article with respective extraction head or with the respective receiving template, thus ensuring its positioning in correct set during conveyance through the work or treatment stations (figures 10 - 15 and respective passages of the description).

Thus, claim 1 does not meet the requirements of Article 33(2) PCT because of lack of novelty of its subject-matter.

**Claims 2 - 24.**

These claims disclose features which are either known from D1 (compare the features of claims 2, 5 and 6 to figures 7 and 15 of D1) or which seem to be a mere matter of design for a person skilled in the art.

Thus, claims 2 - 24 do not add any new or inventive matter to the claims to which they refer.

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VII. Certain defects in the international application

---

The following defects in the form or contents of the international application have been noted:

1. It is appropriate to draft claims to be filed in the two-part form as required by Rule 6.3(b) PCT, whereby the features known from D1 should be placed in the preamble.
2. To meet the requirements of Rule 5.1(a)(ii) PCT, the document D1 should be identified in the description and the relevant background art disclosed therein should be briefly discussed.

- 14 -

CLAIMS

1. A thermoforming apparatus comprising a thermoforming machine (10) fitted with at least one female die (12) and counter-die or male die (13) reciprocally approachable and removable for the operations of closing, thermoforming and opening, a feeder appropriate for feeding thermoforming material in ribbon or plate (14) form between each female die (12) and counter-die (13), cutting means associated with the die and counter-die for cutting the ribbon or plate

5 material, immediately after the closure of the die (12) and counter-die (13), at least one work or treatment station for articles (15) thermoformed in the or each die (12) or counter-die (13), extraction pick-up means (16) designed to withdraw a thermoformed article moulding from the female die (12) and either to convey the same to one or more work or treatment stations or to transfer it to a receiving

10 conveying template (17) which has the same seating configuration as that of the female die (12) and is arranged to move the thermoformed articles (15) past one or more work treatment stations, means of retention suitable for engaging each thermoformed article with the respective extraction head or with the respective receiving template, thus ensuring its positioning in correct set during conveyance through the work or treatment station or stations.

25

2. A thermoforming apparatus as claimed in Claim 1, characterised in that the said pick-up extraction means comprises a plate-like head (16) arranged to be sequentially inserted between the or each female die (12) and counter-die (13) concomitantly with each opening of the same.

30

3. A thermoforming apparatus as claimed in Claim 2, characterised in that it comprises a carousel conveyor (20) with a plurality of bearing arms, each of which supports a respective plate-like head (17) fitted with said retention means for the retention of the thermoformed articles (15) in the correct set while they are being conveyed, stepwise and synchronously with the opening-closing rate of the dies

Replies to PCT by  
Replies to PCT by

PCT

**NOTICE INFORMING THE APPLICANT OF THE  
COMMUNICATION OF THE INTERNATIONAL  
APPLICATION TO THE DESIGNATED OFFICES**

(PCT Rule 47.1(c), first sentence)

From the INTERNATIONAL BUREAU

To:

FITZPATRICKS  
4 West Regent Street  
Glasgow G2 1FS  
ROYAUME-UNI

- 1 APR 1996

INTL

C.M. S.M.  
EE

Date of mailing (day/month/year)

21 March 1996 (21.03.96)

Applicant's or agent's file reference

32/62220/070

08/04/96  
**IMPORTANT NOTICE**

International application No.

PCT/EP95/03451

International filing date

01 September 1995 (01.09.95)

Priority date

14 September 1994 (14.09.94)

Applicant

ISAP OMV GROUP SPA et al

1. Notice is hereby given that the International Bureau has communicated, as provided in Article 20, the international application to the following designated Offices on the date indicated above as the date of mailing of this Notice.

AT,AU,BR,CA,CN,CZ,DE,EP,FI,GB,JP,KP,KR,LK,NO,NZ,PL,RO,RU,SK,SE

2. In accordance with Rule 47.1(c), third sentence, each designated Office will accept the present Notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Offices.

3. Enclosed with this Notice is a copy of the international application as published by the International Bureau.

21 March 1996 (21.03.96) under No. WO 96/08357

**REMINDER REGARDING CHAPTER II (Article 31(2)(a) and Rule 54.2)**

If the applicant wishes to postpone entry into the national phase until 30 months (or later in some Offices) from the priority date, a demand for international preliminary examination must be filed with the competent International Preliminary Examining Authority before the expiration of 19 months from the priority date.

It is the applicant's sole responsibility to monitor the 19-month time limit.

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination.

**REMINDER REGARDING ENTRY INTO THE NATIONAL PHASE (Article 22 or 39(1))**

If the applicant wishes to proceed with the international application in the national phase, he must, within 20 months or 30 months, or later in some Offices, perform the acts referred to therein before each designated or elected Office.

For further important information on the time limits and acts to be performed for entering the national phase, see the Annex to Form PCT/8/301 (Notification of Receipt of Record Copy) and Volume II of the PCT Applicant's Guide.

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Authorized officer:

J. Zahra

Facsimile No.: (41-22) 740 1435

Telephone: (41-22) 730 91 11

Form PCT/8/301 (July 1992)

1023747

NOTICE INFORMING THE APPLICANT OF THE COMMUNICATION OF  
THE INTERNATIONAL APPLICATION TO THE DESIGNATED OFFICES

Date of mailing (day/month/year) 21 March 1996 (21.03.96)	IMPORTANT NOTICE
Applicant's or agent's file reference 32/62220/079	International application No. PCT/EP95/03451

The designated Office(s) of:

AM, AP, BB, BG, BY, CH, DK, EE, ES, GE, HU, IS, KE, KG, KZ, LR, LT, LU, LV, MD, MG, MN, MW, MX, OA, PT, SD, SE, SG, SI, TJ, TM, TT, UA, UG, UZ, VN

has (have) waived the requirement for such a communication, but nevertheless a copy of the international application need not be furnished by the applicant to the Office(s) concerned.

The applicant is hereby notified that, at the time of establishment of this Notice, the time limit under Rule 46.1 for making amendments under Article 19 has not yet expired and the International Bureau had received neither such amendments nor a declaration that the applicant does not wish to make amendments.